

U.S. Department of the Interior  
Bureau of Land Management  
White River Field Office  
73544 Hwy 64  
Meeker, CO 81641

## ENVIRONMENTAL ASSESSMENT

**NUMBER:** CO-110-2006-045-EA

**CASEFILE/PROJECT NUMBER** (optional): COC-60724

**PROJECT NAME:** 9 APDs for wells Freedom Unit 297-28A1-A9

**LEGAL DESCRIPTION:** T.2S. R.97W. NWNW sec.28 (Surface location), 6<sup>th</sup> P.M

Bottom hole locations-Freedom Unit 297-28A1 (SESE sec.20),  
Freedom Unit 297-28A2 (NWNW sec.28),  
Freedom Unit 297-28A3 (NWNW sec.28),  
Freedom Unit 297-28A4 (NESW sec.21),  
Freedom Unit 297-28A5 (SWSW sec.21),  
Freedom Unit 297-28A6 (SWSW sec.21),  
Freedom Unit 297-28A7 (SESW sec.21),  
Freedom Unit 297-28A8 (NENW sec.28),  
Freedom Unit 297-28A9 (NENW sec.28)

**APPLICANT:** ExxonMobil Corporation

### **DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:**

**Proposed Action:** The applicant proposes to drill nine (9) wells from the same well pad. An additional 0.5 mile (40' right-of-way (ROW) x 2640') of new access road would be constructed (total acres=2.42). The well pad size would be approximately 470' x 450' (4.9 ac.) with an adjacent production pad along the access road approximately 80' x 200' (0.37 ac.). Two steel pipelines (6" gas and 3" water) would be buried adjacent to access road for 2400' (ROW approx. 40' [20' addl. ROW]), to a tie in point with existing pipelines. Pipeline ROWs would overlap with new access road ROW to minimize new surface disturbance during construction/burial of pipelines. Approximate surface disturbance of the pipelines would be 1.1 acres. Total acres of new surface disturbance on BLM would be approximately 9 acres (includes cut/fill slopes).

The maximum grade of the access road would not exceed 3%. Turnouts would be installed every 1000 ft. or intervals. CMPs would be placed as needed. Surfacing material would be hauled over existing roads from a source not yet identified.

The proposed access road would be flagged prior to construction.

Water would either be piped with surface lines or trucked over access road. Remaining clear water would be pumped or hauled forward from previous wells after surface casing is set. Surfacing material would be trucked to the location from an outside source and placed as needed.

Drill cuttings would be disposed of in the reserve or dry cutting pit and buried with at least 4' of cover. E & P waste would be handled as defined, prescribed or permitted by the COGCC Rules. Any drilling mud with greater than 1% diesel net weight would be hauled to a proper disposal site. An alternative to hauling would be solidification in the pit with method approved by the Colorado Oil and Gas Conservation Commission (COGCC). All mud cuttings will meet these requirements before being buried or removed from the location. All cuttings will have all harmful properties of the waste reduced or removed and the mobility of leachate constituents reduced or eliminated. The BLM will be contacted prior to testing the cuttings of the first well so that the BLM may witness the testing procedures.

Trash, waste paper, and other garbage would be contained in a fenced trash cage and hauled to a commercial disposal site. Salts that are not used in the drilling fluid would be removed from the location by the supplier. Sewage from the trailer houses will be disposed of in a manner meeting the Rio Blanco County Regulations, as under the guidance of Colorado Water Quality Control Commission, Department of Public Health and Environment. Portable, self-contained chemical toilets will be provided for human waste disposal. Upon completion and as needed the toilet holding tanks will be pumped and the contents disposed of in an approved sewage disposal facility. Chemicals that are not used in the drilling and completion of the well would be removed from the location by the supplier. Drilling fluids would be allowed to evaporate in the reserve pit until the pit is dry enough for back filling. Water produced during tests would be disposed of in the reserve pit as per Onshore Order #7.

Oil produced during tests would be stored in test tanks until sold, at which time it would be hauled from the site.

In the event fluids in the pit do not evaporate in a reasonable time, the fluids would be hauled to a state approved disposal site or would be mechanically evaporated.

The reserve pit would be fenced on three sides with 4 strand barbed wire during drilling and on the fourth side after the rig is released.

No camps, airstrips, etc. would be constructed.

All equipment and vehicles will be confined to the access road and well pad.

Mud pits in the active circulation system would be steel pits. The reserve pit may be lined with an impermeable liner if needed to hold fluid.

If snow is encountered, the snow would be removed before construction begins or the topsoil is disturbed, and placed downhill of the proposed topsoil stockpile.

All available topsoil would be stripped on well locations and access roads, prior to construction, and stockpiled for use in reclamation of the site. Topsoil stockpile would be clearly segregated from any spoil pile and placed where it can be easily retrieved without impact to natural features.

Upon completion of the operation and disposal of trash and debris as prescribed above, pits would be backfilled and recontoured as soon as practical after they have dried.

Unneeded disturbed surfaces remaining after completion to the surface production facilities would be shaped to match the surrounding terrain and seeded as specified by the BLM.

When the well is abandoned, ExxonMobil would rehabilitate the road and location as per BLM specifications.

Revegetation of the drill pad would comply with BLM specifications.

An archaeological investigation and report will be prepared for the proposed access road and well site by Archaeological-Environmental Research Corporation and submitted to the BLM.

Completed wells on this pad will continue to produce during drilling operations per Exxon Mobil Simultaneous Operations guidelines.

Approximate date proposed action work would start is 3/1/06-11/1/06, one well per month.

**No Action Alternative:** No environmental impacts would occur.

**NEED FOR THE ACTION:** To respond to the request by the applicant to construct access road, well pad, and install pipelines.

**PLAN CONFORMANCE REVIEW:** The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: White River Record of Decision and Approved Resource Management Plan (ROD/RMP).

Date Approved: July 1, 1997

Decision Number/Page: Page 2-5

Decision Language: “Make federal oil and gas resources available for leasing and development in a manner that provides reasonable protection for other resource values.”

## **AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES:**

**STANDARDS FOR PUBLIC LAND HEALTH:** In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis. These findings are located in specific elements listed below:

### **CRITICAL ELEMENTS**

#### **AIR QUALITY**

*Affected Environment:* The entire White River Resource area has been classified as either attainment or unclassified for all pollutants, and most of the area has been designated prevention of significant deterioration (PSD) class II. The proposed action is not located within a thirty mile radius of any special designation air sheds or non-attainment areas. Overall, the proposed action alone should not greatly compromise National Ambient Air Quality Standards (NAAQS) on an hourly or daily basis.

*Environmental Consequences of the Proposed Action:* Exhaust produced from production facilities and heavy equipment associated with the proposed actions combined with the increasing number of fluid mining activities in the Piceance Creek Basin will have cumulative impacts detrimental to local air quality. However, following completion of the proposed actions, air quality should return to near pre-construction levels in this location. During dry and windy periods, air quality may be compromised due to increased levels of fugitive particulate matter which is defined as fugitive emissions of particulate matter that are the direct or proximate result of man's activities (e.g. Materials left by man exposed to the wind or later acted upon by another force as the wind or automobile traffic, or particulate matter being thrown into the atmosphere by the operation of a heavy equipment). However, construction operations should not greatly compromise National Ambient Air Quality Standards (NAAQS) for particulate matter which calls for a maximum 24-hour average to be less than or equal to 150  $\mu\text{g}/\text{m}^3$ . In addition, following successful reclamation, particulate matter is also likely to return to pre-construction levels.

*Environmental Consequences of the No Action Alternative:* No adverse environmental impacts would occur.

*Mitigation:* The operator will be responsible for complying with all local, state, and federal air quality regulations as well as providing documentation to the BLM that they have done so. To minimize production of fugitive particulate matter, vehicle speeds must not exceed 15 mph or dust plume must not be visible at appropriate designated speeds for road design. In addition, the application of a BLM approved dust suppressant (e.g. water or chemical

stabilization methods) will be required during dry periods when dust plumes are visible at speeds less than or equal to 15 mph. Surfacing the roadway with gravels will also help mitigate production of fugitive particulate matter.

To reduce production of fugitive particulate matter originating from well pads and associated stockpiled soils (long term storage) interim reclamation will be required. Interim reclamation will consist of excess stockpiled soils associated with pad construction being pulled back over the portion of the well pad not being utilized for production facilities and access. Portions of the well pad undergoing interim reclamation will be returned to grade (as close as possible), promptly re-seeded, and biodegradable fabrics will be utilized on slopes exceeding 5% (e.g. fill slopes).

If interim reclamation is not practical (e.g. completion of drilling operation will require an extended period time (multiple well pads)), stockpiled topsoil will be covered with biodegradable fabrics such as (but not limited to) jute netting and seeded with a BLM approved seed mixture (see vegetation section of this document). Furthermore, soils stockpiled for short durations (e.g. during road/pipeline construction/maintenance) will be wetted during dry periods to reduce production of fugitive particulate matter.

## **CULTURAL RESOURCES**

*Affected Environment:* The proposed well pad for the nine wells, the access road and well tie pipeline has been inventoried at the Class III (100% pedestrian) level (Brogan and Metcalf 2005, Compliance Dated 12/9/2005) with three new sites and three isolated finds located in the inventoried area. On site is what appears to be a historic brush fence that runs through the well pad location and will be impacted by construction. Two sites are what appear to be open lithic scatters and are adjacent to the proposed access road. The isolated finds are also located adjacent to the proposed access road.

*Environmental Consequences of the Proposed Action:* Construction of the proposed well pad location will impact the brush fence and result in a reduction in overall site integrity and damage to the site's context. Construction of the proposed access road itself will not necessarily cause any direct impacts to the two sites if mitigation measures are strictly adhered to. However, the improved access in the area and increased human activity in the area could result in increased impacts from unauthorized collecting or other activities such as recreational use of the area or wood collecting

These activities would result in some long term loss of data from the regional database.

*Environmental Consequences of the No Action Alternative:* There would be no new impacts to cultural resources under the No Action Alternative.

*Mitigation:* 1. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials

are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary)
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

2. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

3. On the brush fence (5RB 5037) where it is impacted by the well pad construction any downed limbs incorporated into the fence line that are piñon pine limbs shall be slab sampled and a tree ring date shall be obtained in order to better understand brush fence ages and contexts in the Piceance Basin.

4. Sites 5RB 5097 and 5168 shall be avoided by all road upgrading/construction and well tie pipeline construction. All road upgrading and pipeline construction shall take place to the west of the site boundaries and the sites shall be fenced during all construction to ensure avoidance.

## **INVASIVE, NON-NATIVE SPECIES**

*Affected Environment:* Noxious weeds known to occur in the project area include houndstongue (*Cynoglossum officinale*), mullein (*Verbascum thapsus*), Russian, spotted and diffuse knapweeds (*Centaurea sp*), bull thistle (*Cirsium vulgare*), yellow toadflax (*Linaria vulgaris*) and black henbane (*Hyoscyamus niger*). The invasive alien annual cheatgrass occurs throughout the project area in association with unvegetated earthen disturbance along roads, wells, and pipelines

*Environmental Consequences of the Proposed Action:* The proposed action will create about 10 acres of new earthen disturbance, which if it is not revegetated with desirable species

and /or treated with herbicides to eradicate noxious weeds/ cheatgrass, will be invaded and dominated by noxious weeds/cheatgrass, increasing the potential for fire and the consequent further proliferation of cheatgrass. Noxious weeds could also spread from the project sites to surrounding native rangelands resulting in a long term negative impact. The resulting proliferation of noxious weeds/cheatgrass will perpetuate a downward cycle of environmental degradation that will be largely irreversible. There will be a low likelihood of long term negative impact if the proposed mitigation is properly implemented.

*Environmental Consequences of the No Action Alternative:* There will be no change from the present situation.

*Mitigation:* The operator will be required to monitor the project area for a minimum of three years post disturbance and eradicate all noxious and invasive species which occur on site using materials and methods approved in advance by the Authorized Officer.

## **MIGRATORY BIRDS**

*Affected Environment:* There are a number of migratory birds that fulfill nesting functions in the Wyoming big sagebrush and pinyon-juniper types traversed by this project during the months of May, June, and July, including several species identified as having higher conservation interest by the Rocky Mountain Bird Observatory, Partners in Flight program (i.e., Brewer's sparrow, gray flycatcher, black-throated gray warbler). Because the well pad and proposed access upgrade are composed almost exclusively of former sagebrush communities heavily encroached with pinyon-juniper regeneration, neither sagebrush nor pinyon-juniper associates are well represented. Woodland species associated with cavities are generally absent.

Although this high plateau area has no open water or wetland areas that support or attract waterfowl use, the development of reserve pits that contain drilling fluids have attracted waterfowl use, at least during the migratory period (i.e., local records: mid-March through late May; mid-October through late November).

*Environmental Consequences of the Proposed Action:* Construction and drilling associated with this well is scheduled to commence in early March 2006 and continue through October. The operation would therefore be established prior to any nest activity and ongoing operations would limit nest starts on the project periphery to those species or individuals tolerant of such disturbance. The access route associated with this well is a seldom used 2-track and likely has no significant influence on breeding bird distribution. Upgrading and pad construction would directly affect about 9 acres of habitat and birds using areas adjacent to the road and pad would be subject to varying levels of nest disruption on an additional 17 acres. Based on BLM's experience with breeding bird densities found in similar habitats, it would be unlikely that more than 5 pair of higher interest migratory birds would be adversely influenced by this action.

It has recently been brought to BLM's attention that in certain situations migratory waterfowl (i.e., teal and gadwall) have contacted drilling or frac fluids (i.e., stored in reserve pits) during or after completion operations and are suffering mortality in violation of the Migratory Bird Treaty

Act. The extent and nature of the problem is not well defined, but is being actively investigated by the federal agencies and the companies. Until the vectors of mortality are better understood, management measures must be conservative and relegated to preventing bird contact with frac and drilling fluids that may pose a problem.

*Environmental Consequences of the No Action Alternative:* There would be no action authorized that would have potential to disrupt the breeding activities of migratory birds.

*Mitigation:* The operator shall prevent use by migratory birds of reserve pits that store or are expected to store fluids which may pose a risk to such birds (e.g., migratory waterfowl, shorebirds, wading birds and raptors) during completion and after completion activities have ceased. Methods may include netting, the use of bird-balls, or other alternative methods that effectively prevent use and that meet BLM approval. It will be the responsibility of the operator to notify the BLM of the method that will be used to prevent use two weeks prior to when completion activities are expected to begin. The BLM approved method will be applied within 24 hours after completion activities have begun. All lethal and non-lethal events that involve migratory birds will be reported to the Petroleum Engineer Technician immediately.

#### **THREATENED, ENDANGERED, AND SENSITIVE ANIMAL SPECIES** (includes a finding on Standard 4)

*Affected Environment:* There are no animals listed, proposed, or candidate to the Endangered Species Act that are known to inhabit or derive important benefit from the areas potentially influenced by the proposed action. Although several BLM sensitive species may occur in the general project vicinity, the project site is a flat ridgeline composed of scattered mature trees entrenched within a matrix of young pinyon-juniper regeneration. In BLM's experience, this habitat character is not amenable to nest site selection by any accipiter, especially northern goshawk. Similarly, these isolated trees provide neither a continuous protective canopy nor over-mature growth forms that would provide effective shelter for bat roosting activities (e.g., opportunistic daytime roosts of Townsend's big-eared bat, and Yuma and fringed myotis).

*Environmental Consequences of the Proposed Action:* Pad and road construction and drilling/completion operations would have no conceivable influence on special status species or associated habitat.

*Environmental Consequences of the No Action Alternative:* There would be no action authorized that would have potential to influence special status species or associated habitats.

*Mitigation:* None.

*Finding on the Public Land Health Standard for Threatened & Endangered species:* The proposed and no-action alternatives would have no influence on populations or habitats of animals associated with the Endangered Species Act or BLM sensitive species and, as such, would have no influence on the status of applicable land health standards.



## **WASTES, HAZARDOUS OR SOLID**

*Affected Environment:* There are no known hazardous or other solid wastes on the subject lands. No hazardous materials are known to have been used, stored or disposed of at sites included in the project area.

*Environmental Consequences of the Proposed Action:* No listed or extremely hazardous materials in excess of threshold quantities are proposed for use in this project. While commercial preparations of fuels and lubricants proposed for use may contain some hazardous constituents, they would be stored, used and transported in a manner consistent with applicable laws, and the generation of hazardous wastes would not be anticipated. Solid wastes would be properly disposed of.

*Environmental Consequences of the No Action Alternative:* No hazardous or other solid wastes would be generated under the no-action alternative.

*Mitigation:* The applicant shall be required to collect and properly dispose of any solid waste generated by the proposed actions.

## **WATER QUALITY, SURFACE AND GROUND (includes a finding on Standard 5)**

*Affected Environment:* Surface Water: The proposed project area is located on the drainage divide between Black Sulphur Creek and Piceance Creek. Several small ephemeral tributary drainages to Black Sulphur Creek and Piceance Creek will be directly impacted by the proposed actions. Black Sulphur Creek is a perennial tributary to Piceance Creek which is a tributary to the White River. The White River is a tributary to the Green River (tributary to the Colorado River). Black Sulphur Creek is situated in stream segment 20 of the White River Basin while the affected portion of Piceance Creek can be found in stream segment 15 of the White River Basin. Disturbed acres resulting from the proposed actions will be nearly equally split between the two watersheds (Black Sulphur Creek = 5.8 acres, Piceance Creek = 4.55 acres). A review of the Colorado's 1989 Nonpoint Source Assessment Report (plus updates), the 305(b) report, the 303(d) list, the White River Resource Area RMP, and the Unified Watershed Assessment was done to see if any water quality concerns have been identified. It should be noted that the White River from Piceance Creek to Douglas Creek has been listed on the states monitoring and evaluation list (M&E list) for sediment impairments. All surface disturbing activities in the Black Sulphur Creek and Piceance Creek catchment areas will directly influence sedimentation rates to Piceance Creek, White River, and eventually the Colorado River.

Stream segment 15 of the White River Basin is defined as the mainstem of Piceance Creek from the Emily Oldland diversion dam to the confluence with the White River. Segment 15 has not been designated use-protected. An intermediate level of water quality protection applies to waters that have not been designated outstanding waters or use-protected waters. For these waters, no degradation is allowed unless deemed appropriate following an antidegradation

review. The state has classified segment 15 as being beneficial for the following uses: Warm aquatic life 2, Recreation 1b, and Agriculture.

Stream segment 20 of the White River Basin is defined as the mainstems of Black Sulphur and Hunter Creeks from their sources to their confluences with Piceance Creek. Segment 20 has not been designated use-protected. An intermediate level of water quality protection applies to waters that have not been designated outstanding waters or use-protected waters. For these waters, no degradation is allowed unless deemed appropriate following an antidegradation review. The state has classified segment 20 as being beneficial for the following uses: Cold aquatic life 1, Recreation 2, and Agriculture.

Ground Water: Surface geologic formation at the proposed location is Tertiary in age (Uinta Formation) and consists primarily of sandstone and siltstone. No springs or water wells have been identified within 1 mile of the proposed action. A review of the US Geological Survey Ground Water Atlas of the United States (Topper et al., 2003) was done to assess ground water resources at the location of the proposed action. The proposed action is located in the Piceance Creek structural basin. Primary hydrogeologic units within the Piceance Basin are listed in the following table.

Summary of Hydrogeologic Units						
Hydrogeologic Unit	Stratigraphic Unit	Physical Description	Thickness	Hydraulic Conductivity	Yield	TDS
			(ft)	(ft/day)	(gpm)	mg/L
<b>Upper Piceance Basin aquifer</b>	Uinta Formation	sandstone, fractured siltstone, fractured marlstone	0 – 1,400	<0.2 to >1.6	1- 900	500-1,000
Mahogany confining unit	Green River Formation	dolomitic marlstone and shale	500-1,800	<0.01	<25	NL
<b>Lower Piceance Basin aquifer</b>	Green River Formation	shale, fine-grained sandstone, fractured marlstone	0 – 1,870	<0.1 to >1.2	1-1,000	1,000-10,000
Basal confining unit	Green River Formation, Wasatch Formation	claystone, siltstone, clay rich oil shale, marlstone, channel sandstone	0-6,800	<0.01	<10-100	NL
<b>Fort Union aquifer</b>	Fort Union Formation	Coarse-grained sandstone	Very thin	NL	NL	NL
<b>Mesaverde aquifer</b>	Mesaverde Group	sandstone interbedded shale and coal	Averages 3,000	0.0001-1.0	NL	NL
Mancos confining unit	Mancos Shale	mostly shale but Frontier Sandstone may be local aquifer	>7,000	NL	NL	NL
Abbreviations: ft = feet, approx = approximate, avg = average, gpm = gallons per minute, mg = milligrams, L = liters, and NL = not listed.						

Table information from Topper et al. (2003).

The Piceance Creek drainage basins upper and lower aquifers are separated by the semi-confining Mahogany Zone. Information presented in Topper et al. (2003) indicates the following approximate depths to potentiometric surfaces (elevation at which water level would have stood

in tightly cased wells, 1985) within hydrogeologic units: upper Piceance basin aquifer 260 feet, lower Piceance basin aquifer 140 feet, and Mesaverde aquifer 560 feet (based on a surface elevation of 6,560 feet). Water well data from the Colorado Division of Water Resources (Topper et al., 2003) indicated that in central Rio Blanco County water wells are uncommon. Based on existing water well data near the project area, total concentration of dissolved constituents in the upper and lower aquifers is generally lower than 1000 milligrams per liter.

*Environmental Consequences of the Proposed Action:* Surface Water: New surface disturbing activities associated with the proposed actions will increase soil exposure to erosional processes. New surface disturbance will destroy existing vegetation and increase compaction. Increased compaction combined with reduced vegetation will further decrease infiltration rates and elevate erosive potential due to runoff (overland flows) and raindrop impact during storm events.

Given the moderately rapid permeability rates of the affected soils, leaks or spills of environmentally unfriendly substances are likely to be carried down gradient in local ground water. Contaminants being transported by local ground water may discharge into surface waters of ephemeral tributaries during wet periods, be transported down gradient and potentially deteriorate surface water quality in lower portions of the watershed.

Ground Water: In the event of any leaks or spills, local ground water may be adversely impacted as runoff could carry contaminants down gradient to alluvial aquifers such as the Piceance Creek alluvium. Potential for ground water contamination increases if fractures in confining units are formed. Hydraulic conductivity increases exponentially along fracture zones resulting in rapid transport of fluids/contaminants in these areas. The upper and lower Piceance Basin aquifers have differing water qualities, mixing will degrade water quality in the upper aquifer which is generally of better quality. Storage or surface disposal methods (e.g. evaporation ponds) for produced water would also elevate potential for contaminating ground water of the Upper Piceance Basin Aquifer and Piceance Creek Alluvial Aquifer.

*Environmental Consequences of the No Action Alternative:* No adverse environmental consequences will result from the no action alternative.

*Mitigation:* The operator will be responsible for complying with all local, state, and federal water quality regulations (such as but not limited to Phase I Storm Water Permit, and Industrial Wastewater/Produced Water Permits). The operator will also be required to provide the BLM with documentation that all required permits were obtained.

Surface Water: All surface disturbing activities will strictly adhere to “Gold Book” surface operating standards for oil and gas exploration and development (copies of the “Gold Book” can be obtained at the WRFO). Corrugated metal pipes (CMPs) are not recommended on slopes less than 10% and will NOT be used as drainage relief structures for stream crossings/gullies or to drain inside drain ditches on slopes less than 3%. Based on the nature of the affected soils, drain dips will be utilized in place of CMPs in these locations. Energy dissipaters such as large gravels/small cobbles will be used at culvert and drainage dip outlets to minimize additional erosion. To mitigate water being channelized down the roadway, all activity must stop when

soils or road surfaces become saturated to a depth of three inches. Mud blading will be prohibited in attempts to reduce further soil displacement. Furthermore, following abandonment of the well pad all disturbed surfaces will be recontoured to the original grade promptly seeded with the appropriate seed mixture as outlined in the vegetation section of this document and then covered with a sufficient amount of woody debris (if available).

To mitigate surface erosion at the well pad, interim reclamation will be required as outlined in the Air Quality mitigation section above.

Ground Water: Shallow aquifers shall be protected from hydrofracturing and the production of oil and gas by installation and cementing of surface and intermediate casing. Any groundwater produced from the Fort Union or Mesaverde Formations will be hauled off and disposed of due to poor water quality and therefore preventing adverse impacts to valuable surface and ground water resources. Environmentally unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of spill-guards (or equivalent spill prevention equipment) under and around pumping equipment is suggested to intercept such contaminants prior to contacting soils. Furthermore, all pits shall be lined and all wastes associated with construction and drilling will be properly treated and disposed of.

*Finding on the Public Land Health Standard for water quality:* Stream segments 15 and 20 of the White River Basin currently meet water quality standards set by the state. Many of the upper tributaries which are ephemeral and flow in direct response to storm events do not meet the standards during periods of flow. Following suggested mitigation measures, water quality in the affected stream segment should be unaffected by the proposed action and continue to meet standards.

## **WETLANDS AND RIPARIAN ZONES (includes a finding on Standard 2)**

*Affected Environment:* The nearest channel systems supporting or having potential to support wetland and/or riparian vegetation (i.e., Black Sulphur and Piceance Creeks) are separated from the proposed action by a minimum 1 mile of ephemeral channel. Both stream systems are privately owned at the point of intersection and an additional 12 miles downstream. Although no inventory information exists on which to document their functional status, these systems are believed to be largely in a functional-at-risk category. The channels are typically moderately entrenched with limited riparian expression, tending to be heavily influenced by winter and spring livestock grazing, irrigation drawdown, and hay production.

*Environmental Consequences of the Proposed Action:* This pad is situated on the crest of a relatively broad, low-gradient ridge separated from the nearest riparian system by at least one mile of ephemeral channel. Pad and road construction would have no direct impact on riparian/wetland resources. With the application of BMPs associated with soil erosion there is no reasonable likelihood that fugitive sediments would have any influence on the function or condition of the Piceance Creek channel or its associated riparian resources.

*Environmental Consequences of the No Action Alternative:* There would be no action authorized that would have any direct or indirect influence on downstream riparian communities.

*Mitigation:* None.

*Finding on the Public Land Health Standard for riparian systems:* Downstream portions of Piceance and Black Sulphur Creeks are privately owned with the nearest BLM-administered reach about 12 miles downstream. These privately controlled channels are relatively stable, but due to the factors listed above, their functional status is generally at-risk. Neither the proposed or no-action alternative would have any effective influence on the function or condition of these channels.

#### **CRITICAL ELEMENTS NOT PRESENT OR NOT AFFECTED:**

No ACEC's, flood plains, prime and unique farmlands, or Wild and Scenic Rivers, threatened, endangered or sensitive plants exist within the area affected by the proposed action. For threatened, endangered and sensitive plant species Public Land Health Standard is not applicable since neither the proposed nor the no-action alternative would have any influence on populations of, or habitats potentially occupied by, special status plants. There are also no Native American religious or environmental justice concerns associated with the proposed action.

#### **NON-CRITICAL ELEMENTS**

The following elements **must** be addressed due to the involvement of Standards for Public Land Health:

#### **SOILS** (includes a finding on Standard 1)

*Affected Environment:* The following data is a product of an order III soil survey conducted by the Natural Resources Conservation Service (NRCS) in Rio Blanco County, CO. The following table highlights important soil characteristics. A complete summary of this information can be found at the White River Field Office. No "fragile soils" have been mapped near the project area.

Soil Number	Soil Name	Impacted Acres (30m)	Slope	Ecological site	Salinity	Run Off	Erosion Potential	Bedrock
64	Piceance fine sandy loam	3.36	5-15%	Rolling Loam	<2	Medium	Moderate to high	20-40
70	Redcreek-Rentsac complex	14.61	5-30%	PJ woodlands/ PJ woodlands	<2	Very high	Moderate to high	10-20
73	Rentsac channery loam	3.09	5-50%	Pinyon-Juniper woodlands	<2	Rapid	Moderate to very	10-20

*64-Piceance fine sandy loam* (5 to 15 percent slopes) is a moderately deep, well drained soil located on uplands and broad ridgetops. It formed in eolian material and colluvium derived dominantly from sandstone. The native vegetation is mainly low shrubs, grasses, and a few pinyon trees. Elevation is 6,300 to 7,500 feet. The average annual precipitation is 15 to 18 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period is 80 to 105 days. Typically, the surface layer is brown fine sandy loam 4 inches thick. The upper 5 inches of the subsoil is brown loam, and the lower 13 inches is light yellowish brown loam. The substratum is very pale brown channery loam 8 inches thick. Hard sandstone is at a depth of 30 inches. Depth to sandstone ranges from 20 to 40 inches. Permeability of this Piceance soil is moderate. Available water capacity is moderately low. Effective rooting depth is 20 to 40 inches. Runoff is slow to medium, and the hazard of water erosion is moderate to high.

*70-Redcreek-Rentsac complex* (5 to 30 percent slopes) is located on mountainsides and ridges. The native vegetation is mainly pinyon and juniper trees with an understory of shrubs and grasses. Elevation is 6,000 to 7,400 feet. The average annual precipitation is 14 to 18 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period is 85 to 105 days. This unit is 60 percent Redcreek sandy loam and 30 percent Rentsac channery loam. The Redcreek soil is shallow and well drained. It formed in residual and eolian material derived dominantly from sandstone. Typically, the surface layer is brown sandy loam about 4 inches thick. The next layer is brown, calcareous sandy loam about 7 inches thick. The underlying material is very pale brown, calcareous channery loam 5 inches thick. Hard sandstone is at a depth of 16 inches. Depth to hard sandstone or hard shale ranges from 10 to 20 inches. Permeability of the Redcreek soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is medium, and the hazard of water erosion is moderate to high. The Rentsac soil is shallow and well drained. It formed in residuum derived dominantly from sandstone. Typically, the upper part of the surface layer is grayish brown channery loam about 5 inches thick. The next layer is brown very channery loam about 4 inches thick. The underlying material is very pale brown extremely flaggy loam 7 inches thick. Hard sandstone is at a depth of 16 inches. Depth to hard sandstone or hard shale ranges from 10 to 20 inches. Permeability of the Rentsac soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is medium, and the hazard of water erosion is moderate to high.

*73-Rentsac channery loam* (5 to 50 percent slopes) is a shallow, well drained soil located on ridges, foothills, and side slopes. It formed in residuum derived dominantly from calcareous sandstone. The native vegetation is mainly pinyon, juniper, brush, and grasses. Elevation is 6,000 to 7,600 feet. The average annual precipitation is 14 to 18 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period is 80 to 105 days. Typically, the surface layer is grayish brown channery loam about 5 inches thick. The next layer is very channery loam about 4 inches thick. The underlying material is extremely flaggy light loam 7 inches thick. Hard sandstone is at a depth of 16 inches. Depth to sandstone ranges from 10 to 20 inches. Permeability of this Rentsac soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is rapid, and the hazard of water erosion is moderate to very high.

*Environmental Consequences of the Proposed Action:* The well pad, access road and pipeline are situated on soils which have been identified as having moderate to very high erosive potential. Improper drainage from the project areas will increase potential for overland flows accelerating erosion rates leading to soil piping, head cutting and gully formation. Removal of limited ground cover will also expose soils to erosional processes. Heavy traffic will increase soil compaction decreasing infiltration rates which in turn will also increase potential for erosive overland flows.

Leaks or spills of environmentally unfriendly substances on or near the pad may contaminate soils hindering revegetation efforts. Soils unable to support a healthy plant community will be less cohesive (due to lack of root structure) and more vulnerable to erosional processes.

*Environmental Consequences of the No Action Alternative:* None

*Mitigation:* Comply with “Gold Book” surface operating standards for constructing well pad, pipeline and access road (copies of the “Gold Book” can be obtained at the WRFO). Interim reclamation will be required as addressed in the Air and Water Quality portions of this document.

To mitigate contamination of soils and local ground water, environmentally unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of impermeable matting under equipment (tanks, pumps, or other equipment used in handling hazardous liquids) is *suggested* to intercept such contaminants prior to contacting soils.

Complete reclamation will follow abandonment of well pad. Access road and well pad will be recontoured and 100% of disturbed surfaces will be revegetated with the suggested seed mixture as outlined in the vegetation section of this document.

*Finding on the Public Land Health Standard for upland soils:* Currently, soils in the vicinity of the proposed action exhibit infiltration and permeability rates that are appropriate to soil type, landform, climate, and geologic processes. The proposed actions will cause decreases in both infiltration and permeability rates due to soil compaction and loss of vegetal cover. However, with proper mitigation soils health standards will continue to be met.

## **VEGETATION** (includes a finding on Standard 3)

*Affected Environment:* The proposed action will occur primarily in early and mid seral pinyon juniper woodland.

*Environmental Consequences of the Proposed Action:* Two primary negative impacts will/could occur as a result of access road, pad and pipeline construction; 1) The 10 acres disturbed as a result of pipeline, access road and pad construction will accelerate the rate of plant community fragmentation which is presently occurring in this area of Piceance Basin. This impact is unmitigated in the short term and likely, longer. 2) In terms of plant community composition, structure and function, the principal negative impact over the long term would

occur if cheatgrass or noxious weeds are allowed to establish and proliferate on the disturbed areas resulting from pipeline and access road construction.

*Environmental Consequences of the No Action Alternative:* There will be no change from the present situation.

*Mitigation:* Promptly revegetate all disturbed areas with Native Seed mix #3. Revegetation will commence immediately after construction and will not be delayed until the following fall. Debris will not be scattered on the pipeline until after seeding operations are completed.

Seed mixture rates are Pure Live Seed (PLS) pounds per acre. Drill seeding is the preferred method of application. To encourage forb establishment, special provisions (e.g., separate broadcast and light dragging) will be made to prevent forb seed from becoming too deeply buried during the seeding process (i.e., objective seeding depth of 1/8" to no greater than 1/2").

Native Seed Mix # 3		
Plant Species	PLS/Lb	Ecological Site
Western wheatgrass (Rosana)	2	Gravelly 10"-14", Pinyon/Juniper Woodland, Stony Foothills, 147 (Mountain Mahogany)
Bluebunch wheatgrass (Whitmar)	2	
Needle and thread	1	
Indian ricegrass (Rimrock)	2	
Fourwing saltbush (Wytana)	1	
Utah sweetvetch	1	

If construction/development occurs between April 15 and November 15, the operator will be required to water or surface access roads to reduce airborne dust and damage to roadside vegetation communities

*Finding on the Public Land Health Standard for plant and animal communities* (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial): Vegetation in the project area currently meets the Standard on a watershed and landscape basis and is expected to continue to meet the Standard in the future following implementation of the proposed action.

*Finding on the Public Land Health Standard for plant and animal communities* (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial): Vegetation in the project area currently meets the Standard on a watershed and landscape basis and is expected to continue to meet the Standard in the future following implementation of the proposed action.

## **WILDLIFE, AQUATIC** (includes a finding on Standard 3)

*Affected Environment:* The nearest channel systems supporting or having potential to support aquatic habitat (i.e., Black Sulphur and Piceance Creeks) are separated from the proposed action by a minimum 1 mile of ephemeral channel. Both stream systems are privately owned at the point of intersection and for an additional 12 miles downstream. Although no inventory information exists on which to document their functional state, these streams generally



have very limited potential to sustain higher order aquatic systems. The channels are moderately entrenched with limited riparian expression, and tend to be heavily influenced by winter and spring livestock grazing, irrigation drawdown, and hay production. Fish are present in Piceance Creek when flows are favorable, but density is low, distribution sporadic, and composition is limited to the ubiquitous speckled dace and occasional trout that escape from stocked upstream ponds.

*Environmental Consequences of the Proposed Action:* This pad is situated on the crest of a relatively broad, low-gradient ridge separated from the nearest riparian system by at least one mile of ephemeral channel. Pad and road construction would have no direct impact on aquatic resources. With the application of BMPs associated with soil erosion there is no reasonable likelihood that fugitive sediments would have any influence on the function or condition of the Black Sulphur or Piceance Creek channel or their associated aquatic resources.

*Environmental Consequences of the No Action Alternative:* There would be no action authorized that would have any direct or indirect influence on downstream aquatic communities.

*Mitigation:* None.

*Finding on the Public Land Health Standard for riparian systems:* Downstream portions of Piceance and Black Sulphur Creeks are privately owned with the nearest BLM-administered reach about 12 miles downstream. These privately controlled channels are relatively stable, but due to the factors listed above, their functional status is generally at-risk and the capability to support higher order aquatic communities decidedly limited. Neither the proposed or no-action alternative would have any effective influence on the function or condition of these channels.

## **WILDLIFE, TERRESTRIAL** (includes a finding on Standard 3)

*Affected Environment:* The project area is encompassed by deer severe winter range that is normally occupied from September through April or early May. Advanced vegetation succession (pinyon-juniper encroachment) across the ridgeline has likely suppressed the production and availability of favored seasonal deer forages, particularly Wyoming big sagebrush, antelope bitterbrush, and the herbaceous contingent.

Consultants surveyed the project vicinity in October 2005 and located 2 woodland stick nests. A functional red-tailed hawk nest is located on the eastern edge of the ridgeline about 150' from the proposed access road (i.e., existing two-track); a functional Cooper's hawk nest is located in a mid-slope drainage position about 500' lateral and 50 vertical feet downslope of the nearest point of disturbance. Neither nest showed evidence of recent use (i.e., previous season).

Non-game wildlife using this area are typical and widely distributed in extensive like-habitats across the Resource Area and northwest Colorado; there are no narrowly endemic or highly specialized species known to inhabit those lands potentially influenced by this action.

*Environmental Consequences of the Proposed Action:* The proposed action represents an incremental addition to natural gas development activity on the ridge between Hunter Creek and Dry Gulch. Although the access uses an existing 2-track route and would, therefore, not increase effective road density in this area, the change in road character and increasing frequency of use would expand the extent of avoidance-related effects (i.e., behavioral avoidance and habitat disuse; increased energetic demands) to an additional 80 acres or so and represents an incremental decline in severe winter range capacity during the early spring period. Well development would likely be concluded by the following winter use period and it is expected that only low level well monitoring activity would take place during the production phase. The long-term occupation of about 9 acres of foraging area (pad, pipeline, and road) would have negligible influence on big game forage availability, with the herbaceous component ultimately offset by reclamation.

There are no reasonable alternatives to accessing this ridgeline and, as proposed, vehicle activity associated with the well access (about 150') would likely deter any further nesting use of the red-tailed hawk nest site. In an effort to retain the longer term utility of this site, it is recommended that the well access be shifted as far as possible to the western edge of the ridge, therefore providing the maximum lateral separation between access road activity and the nest site (minimum 400'). Red-tailed hawks have a consistent history of establishing and continuing to use nests in close proximity to well-traveled secondary roads in Piceance Basin and there is a reasonable likelihood that, after initial construction and well development, this pair would resume occupation of this site. Because of nest disuse in 2005, it is likely that this site represents an alternate nest for this pair. Due to the uncertainties involved with its potential use in 2006 and tempered by the conflicting objective of minimizing intense development activity on deer severe winter range, it is recommended that no timing limitation be applied to this long-duration action (nest about 1000' from well head). Similarly, the Cooper's hawk nest is considered sufficiently removed and screened from development (minimum 600' from road, about 1000' from well head) as to pose no substantive threat to potential use in the 2006 or long term site utility. Both nest sites would be scheduled for annual monitoring by BLM biologists in following years as a means of tracking stipulation efficacy.

Similar to the big game discussion above, road upgrading and pad construction would reduce the current utility of the site for nongame bird and small mammal habitation on an incremental scale. However, woodland habitats comprised primarily of regeneration and submature forms do not support a strong contingent of obligate woodland species due to suboptimal substrate (e.g., relatively simple canopy and understory structure, lack of cavities). The loss of 9 acres of submature woodland habitat (the site likely an historic big sagebrush disclimax) is considered negligible.

*Environmental Consequences of the No Action Alternative:* There would be no action authorized that would have potential to affect resident wildlife populations or associated habitat.

*Mitigation:* Within a minimum ¼ mile (south) of the pad edge, the proposed well access will be shifted to the western edge of the ridge to provide maximum reasonable separation between surface disturbance and the red-tailed hawk nest site. Also within ¼ mile of pad, no turnouts will be constructed on the east side of access road and the pipeline right-of-way width

will be minimized to the extent practicable. The operator will be responsible for effectively conditioning the existing 2-track to deter any further vehicle traffic and allow for natural recovery of the track.

*Finding on the Public Land Health Standard for plant and animal communities* (partial, see also Vegetation and Wildlife, Aquatic): On a landscape scale, the project area meets the public land health standards for terrestrial animal communities. The proposed action is considered an incremental addition to those lands dedicated to mineral development, but with the incorporation of proposed mitigation, would not detract measurably from continued meeting of the land health standard at the landscape scale.

**OTHER NON-CRITICAL ELEMENTS:** For the following elements, only those brought forward for analysis will be addressed further.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Access and Transportation			X
Cadastral Survey	X		
Fire Management			X
Forest Management			X
Geology and Minerals			X
Hydrology/Water Rights			X
Law Enforcement		X	
Noise		X	
Paleontology			X
Rangeland Management			X
Realty Authorizations		X	
Recreation			X
Socio-Economics		X	
Visual Resources			X

## ACCESS AND TRANSPORTATION

*Affected Environment:* Proposed action is located coincident with existing unnumbered BLM routes.

*Environmental Consequences of the Proposed Action:* Access may be lost as well-pad could potentially inhibit legal public access to the north.

*Environmental Consequences of the No Action Alternative:* None.

*Mitigation:* Public access must be maintained beyond well pad to the north along existing two-track route.

## **FIRE MANAGEMENT**

*Affected Environment:* The proposed 297-28A1-A9 well pad involves approximately 2.1 miles of road and pipeline construction and/or road improvement and about 5.4 acres of drill pad clearing for an approximate total of 10 acres of disturbance in pinyon/juniper stands.

The National Fire Plan calls for “firefighter and public safety” to be the highest priority for all fire management activities. In the pinyon, juniper, and brush types common on the White River Resource Area, roads and other man-made openings are commonly used as fuel breaks or barriers to control the spread of both wildland and prescribed fires. By reducing the activity fuels created from this proposal, future fire management efforts in this area should be safer for those involved and more effective.

*Environmental Consequences of the Proposed Action:* Due to the existing tree cover of pinyon and juniper, there will be a need for the operator to clear the trees associated with the disturbance. If not adequately treated, these trees will result in elevated hazardous fuels conditions and remain on-site for many years. These accumulations of dead material are very receptive to fire brands and spotting from wind driven fires and can greatly accelerate the rate of spread of the fire front. The road(s) associated with this project may be used by the general public for a variety of uses, including access for fire wood gathering, hunting and other dispersed recreational activities. Increased public use of an area will nearly always result in an increased potential for man-caused wildland fires. If not treated the slash and woody debris will create an elevated hazardous dead fuel loading which could pose significant control problems in the event of a wildfire. Additionally there would be greater threat to public, Exxon, Exxon contractors, and fire suppression personnel.

*Environmental Consequences of the No Action Alternative:* There would be no tree removal or disturbance to cause significant dead fuel loading.

*Mitigation:* The operator has two options for treatment of slash from this project. A hydro-ax or other mulching type machine could be used to remove the trees. The machines are capable of shredding trees up to 12" in diameter and 15' tall as well as mowing brush like a conventional brush beater. It generally leaves small branches and pieces of wood from pencil size up to bowling ball size and the mulch is evenly scattered across the surface. This would effectively breakdown the woody fuel and scatters the debris thereby eliminating any hazardous fuel load adjacent to the new road and well pad. The other option would be to cut trees and have them removed for firewood, posts, or other products. The branches and tops should be lopped and scattered to a depth of 24 inches or less. If the products are left for collection by the general public, they should be stacked in small manageable piles along the roadside or pad to facilitate removal. For material brought back onto the pipeline r-o-w the material should be evenly scattered, so as to not create jackpots, and the material should not exceed 5 tons /acre.

## **FOREST MANAGEMENT**

*Affected Environment:* The well pad, pipeline and access road are within mature pinyon/juniper woodlands. This stand is considered commercial, based on quality production and accessibility. Within the White River ROD/RMP a limit of 25 acres per year for clearcutting of woodlands is permitted. These stands are also used by the local population as a source of firewood and fence posts, and are authorized under personal use permits.

*Environmental Consequences of the Proposed Action:* Under the proposed action 9 acres of woodland would be removed. The estimated volume of material removed is estimated at 144 cords. The removal of woodland resources is within that established within the land use plan. Following reclamation pinions and junipers are expected to reoccupy the site and develop into mature woodlands. Establishment is expected to take up to 30 years and mature woodlands developing in 250+ years. With the mitigation listed below there would not be problems with disease/insects or vehicle use along the pipeline.

*Environmental Consequences of the No Action Alternative:* There would be no impacts.

*Mitigation:* The applicant will be billed for the forest materials removed as described by the proposed action. Forestry concurs with mitigation proposed by fire management. This would also decrease the opportunity for an outbreak of pine beetle.

## **GEOLOGY AND MINERALS**

*Affected Environment:* The surface geologic formation of the well pad is Uinta and ExxonMobil's targeted zone is in the Mesaverde. During drilling potential water, oil shale, sodium, and gas zones will be encountered from surface to the targeted zone. Fresh water aquifers that will be encountered during drilling are the Perched in the Uinta, the A-groove, B-groove and the Dissolution Surface in the Green River formation. These aquifer zones along with the Wasatch formation are known for difficulties in drilling and cementing. Oil shale and sodium resources are located in the Green River formation and the proposed well pad is located in an area identified in the ROD/RMP as available for sodium leasing. The bottom hole locations are on Federal oil and gas lease COC-60274.

*Environmental Consequences of the Proposed Action:* The cementing procedure of the proposed actions isolates the formations and will prevent the migration of gas, water, and oil between formations. This includes oil shale and coal zones. However, conventional recovery of the coals is not considered feasible at the depths that are encountered in the well. Development of this well will deplete the natural gas resources in the targeted formation.

*Environmental Consequences of the No Action Alternative:* The natural gas resources in the targeted zone would not be recovered at this time.

*Mitigation:* None

## HYDROLOGY AND WATER RIGHTS

*Affected Environment:* Refer to water quality section.

*Environmental Consequences of the Proposed Action:* Refer to water quality section.

*Environmental Consequences of the No Action Alternative:* Refer to water quality section.

*Mitigation:* Refer to water quality section.

## PALEONTOLOGY

*Affected Environment:* The proposed well pad location, access road and well tie pipeline route is located in an area generally mapped as the Uinta Formation which the BLM has classified as a Condition I formation meaning that it is known to produce scientifically important fossil resources.

*Environmental Consequences of the Proposed Action:* If it should become necessary, at any time, to excavate into the underlying rock formation to bring the road to an acceptable grade, bury the well tie pipelines, level the well pad or excavate the reserve/blooiie pit there is a potential to adversely impact scientifically important fossil resources.

*Environmental Consequences of the No Action Alternative:* There would be no new impacts to fossil resources under the No Action Alternative.

*Mitigation:* A paleontological inventory of the exposed outcrops along the access road and on the well pad location shall be completed and an inventory report detailing the results of the inventory and any recommended mitigation submitted to the BLM prior to the initiation of any construction.

2. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear to be of noteworthy scientific interest
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible)

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator

will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

3. Prior the initiation of any excavation into the underlying rock a paleontological monitor shall be present for all excavations into the rock formation for grading the road, burying the well tie pipelines, leveling the well pad and/or excavation of the reserve/bloolie pit.

## RANGELAND MANAGEMENT

*Affected Environment:* the proposed action is within the Pat Johnson /MTW Ranch winter use area of the Little Hills allotment (06006) which is licensed for grazing use as follows:

Allotment	Permit #	Livestock # and Kind		Period of Use	Percent Public Land	Authorized Use (AUM)
Little Hills (06006)	051407	100	C	11/01-11/30	100	99
		292	C	12/01-12/31	100	298
		100	C	01/01-01/30	100	99
	051408	139	C	11/01-11/30	100	137
		277	C	12/01-12/31	100	282
		139	C	01/01-01/30	100	137

*Environmental Consequences of the Proposed Action:* There will be a net loss of 2 AUMs of forage production as a result of the proposed action.

*Environmental Consequences of the No Action Alternative:* There will be no change from the present situation.

*Mitigation:* All fences crossed by an access road to the well location, pipeline will have a cattleguard installed and maintained to BLM specifications for the lifetime of the project. All cattleguard/fence work will take place prior to well location and pipeline construction.

Any and all fences intersected by the pipeline will be braced to BLM specifications prior to cutting. A temporary wire gate will be constructed. This work will take place prior to pipeline ROW construction. A copy of the applicable BLM fence specifications will be included as part of the conditions of approval.

Reserve pit fencing will comply with BLM specifications as described in the *BLM Gold Book (Fourth Edition, 2005)*. Reserve pit fence specifications will be included as part of the conditions of approval.

Revegetate as described in the Vegetation section.

## RECREATION

*Affected Environment:* The proposed action occurs within the White River Extensive Recreation Management Area (ERMA). BLM custodially manages the ERMA to provide for unstructured recreation activities such as hunting, dispersed camping, hiking, horseback riding, wildlife viewing and off-highway vehicle use.

The project area has been delineated a Recreation Opportunity Spectrum (ROS) class of Semi-Primitive Motorized (SPM). SPM physical and social recreation setting is typically characterized by a natural appearing environment with few administrative controls, low interaction between users but evidence of other users may be present. SPM recreation experience is characterized by a high probability of isolation from the sights and sounds of humans that offers an environment that offers challenge and risk.

*Environmental Consequences of the Proposed Action:* The public will lose approximately 10 acres of dispersed recreation potential while wells are in operation. The public will most likely not recreate in the vicinity of these facilities and will be dispersed elsewhere. If action coincides with hunting seasons (September through November) it will most likely disrupt the experience sought by those recreationists.

With the introduction of new well pads and roads, an increase of traffic could be expected increasing the likelihood of human interactions, the sights and sounds associated with the human environment and a less naturally appearing environment.

*Environmental Consequences of the No Action Alternative:* No loss of dispersed recreation potential and no impact to hunting recreationists.

*Mitigation:* None.

## **VISUAL RESOURCES**

*Affected Environment:* The proposed action would be located in an area with a VRM III classification. The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

*Environmental Consequences of the Proposed Action:* The proposed action would be located on top of a ridge in stands of pinyon/juniper trees. The location would not be visible from Rio Blanco County road 5 (Piceance Creek Road) which would be the paved route most frequently traveled by a casual observer. A casual observer traveling on RBC 69 would be able to view the proposed action for a short period of time. By painting all production facilities Juniper Green, the level of change to the characteristic landscape would be low and the objectives of the VRM III classification would be retained.

*Environmental Consequences of the No Action Alternative:* There would be no impacts.



*Mitigation:* Paint all production facilities Juniper Green (Munsell Soil Color Chart of Standard Environmental Colors) within 6 months of installation.

**CUMULATIVE IMPACTS SUMMARY:** Cumulative impacts from oil and gas development were analyzed in the White River Resource Area PRMP/FEIS. Current development, including the actions proposed in this EA, has not exceeded the foreseeable development analyzed in the PRMP/FEIS.

**REFERENCES CITED:**

Brogan, John M. and Sally J. Metcalf

2005 Exxon-Mobil Corporation's Nine Proposed Gas Well Locations and a Proposed Water Line, Class III Cultural Resource Inventory, Rio Blanco County, Colorado. Metcalf Archaeological Consultants, Inc., Eagle, Colorado.

Topper, R., K.L. Spray, W.H. Bellis, J.L. Hamilton, and P.E. Barkmann. 2003. Groundwater Atlas of Colorado, Special Publication 53. Prepared for State of Colorado Department of Natural Resources, Division of Minerals and Geology. Colorado Geological Survey. Denver, Colorado.

Tweto, Ogden

1979 Geologic Map of Colorado. United States Geologic Survey, Department of the Interior, Reston, Virginia.

**PERSONS / AGENCIES CONSULTED:** None

**INTERDISCIPLINARY REVIEW:**

<b>Name</b>	<b>Title</b>	<b>Area of Responsibility</b>
Nate Dieterich	Hydrologist	Air Quality
Tamara Meagley	Natural Resource Specialist	Areas of Critical Environmental Concern
Tamara Meagley	Natural Resource Specialist	Threatened and Endangered Plant Species
Michael Selle	Archeologist	Cultural Resources Paleontological Resources
Mark Hafkenschiel	Rangeland Management Specialist	Invasive, Non-Native Species, Vegetation, Rangeland Management
Ed Hollowed	Wildlife Biologist	Migratory Birds
Ed Hollowed	Wildlife Biologist	Threatened, Endangered and Sensitive Animal Species
Melissa Kindall	Hazmat Collateral	Wastes, Hazardous or Solid
Nate Dieterich	Hydrologist	Water Quality, Surface and Ground Hydrology and Water Rights
Ed Hollowed	Wildlife Biologist	Wetlands and Riparian Zones
Chris Ham	Outdoor Recreation Planner	Wilderness
Nate Dieterich	Hydrologist	Soils
Ed Hollowed	Wildlife Biologist	Wildlife, Terrestrial and Aquatic
Chris Ham	Outdoor Recreation Planner	Access and Transportation
Ken Holsinger	Natural Resource Specialist	Fire Management
Robert Fowler	Forester	Forest Management
Paul Daggett	Mining Engineer	Geology and Minerals
Penny Brown	Realty Specialist	Realty Authorizations
Chris Ham	Outdoor Recreation Planner	Recreation
Keith Whitaker	Natural Resource Specialist	Visual Resources
Valerie Dobrich	Natural Resource Specialist	Wild Horses

## **Finding of No Significant Impact/Decision Record (FONSI/DR)**

**CO-110-2006-045-EA**

**FINDING OF NO SIGNIFICANT IMPACT (FONSI)/RATIONALE:** The environmental assessment and analyzing the environmental effects of the proposed action have been reviewed. The approved mitigation measures (listed below) result in a Finding of No Significant Impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

**DECISION/RATIONALE:** It is my decision to approve the proposed action with the mitigation measures listed below. The proposed actions are in concert with the objectives of the White River ROD/RMP in that they would allow development of federal oil and gas resources in a manner that provides reasonable protection for other resource values. Protection for other resource values will be assured by implementation of the mitigation measures described below and attached to the APD as Conditions of Approval

### **MITIGATION MEASURES:**

1. The operator will be responsible for complying with all local, state, and federal air quality regulations as well as providing documentation to the BLM that they have done so. To minimize production of fugitive particulate matter, vehicle speeds must not exceed 15 mph *or* dust plume must not be visible at appropriate designated speeds for road design. In addition, the application of a BLM approved dust suppressant (e.g. water or chemical stabilization methods) will be required during dry periods when dust plumes are visible at speeds less than or equal to 15 mph. Surfacing the roadway with gravels will also help mitigate production of fugitive particulate matter.
2. To reduce production of fugitive particulate matter originating from well pads and associated stockpiled soils (long term storage) interim reclamation will be required. Interim reclamation will consist of excess stockpiled soils associated with pad construction being pulled back over the portion of the well pad not being utilized for production facilities and access. Portions of the well pad undergoing interim reclamation will be returned to grade (as close as possible), promptly re-seeded, and biodegradable fabrics will be utilize on slopes exceeding 5% (e.g. fill slopes).
3. If interim reclamation is not practical (e.g. completion of drilling operation will require an extended period time (multiple well pads)), stockpiled topsoil will be covered with biodegradable fabrics such as (but not limited to) jute netting and seeded with a BLM approved seed mixture (see vegetation section of this document). Furthermore, soils stockpiled for short

durations (e.g. during road/pipeline construction/maintenance) will be wetted during dry periods to reduce production of fugitive particulate matter.

4. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary)
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

5. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

6. On the brush fence (5RB 5037) where it is impacted by the well pad construction any downed limbs incorporated into the fence line that are piñon pine limbs shall be slab sampled and a tree ring date shall be obtained in order to better understand brush fence ages and contexts in the Piceance Basin.

7. Sites 5RB 5097 and 5168 shall be avoided by all road upgrading/construction and well tie pipeline construction. All road upgrading and pipeline construction shall take place to the west of the site boundaries and the sites shall be fenced during all construction to ensure avoidance.

8. The operator will be required to monitor the project area for a minimum of three years post disturbance and eradicate all noxious and invasive species which occur on site using materials and methods approved in advance by the Authorized Officer.

9. The operator shall prevent use by migratory birds of reserve pits that store or are expected to store fluids which may pose a risk to such birds (e.g., migratory waterfowl, shorebirds, wading

birds and raptors) during completion and after completion activities have ceased. Methods may include netting, the use of bird-balls, or other alternative methods that effectively prevent use and that meet BLM approval. It will be the responsibility of the operator to notify the BLM of the method that will be used to prevent use two weeks prior to when completion activities are expected to begin. The BLM approved method will be applied within 24 hours after completion activities have begun. All lethal and non-lethal events that involve migratory birds will be reported to the Petroleum Engineer Technician immediately.

10. The applicant shall be required to collect and properly dispose of any solid waste generated by the proposed actions.

11. The operator will be responsible for complying with all local, state, and federal water quality regulations (such as but not limited to Phase I Storm Water Permit, and Industrial Wastewater/Produced Water Permits). The operator will also be required to provide the BLM with documentation that all required permits were obtained.

12. All surface disturbing activities will strictly adhere to “Gold Book” surface operating standards for oil and gas exploration and development (copies of the “Gold Book” can be obtained at the WRFO). Corrugated metal pipes (CMPs) are not recommended on slopes less than 10% and will NOT be used as drainage relief structures for stream crossings/gullies or to drain inside drain ditches on slopes less than 3%. Based on the nature of the affected soils, drain dips will be utilized in place of CMPs in these locations. Energy dissipaters such as large gravels/small cobbles will be used at culvert and drainage dip outlets to minimize additional erosion. To mitigate water being channelized down the roadway, all activity must stop when soils or road surfaces become saturated to a depth of three inches. Mud blading will be prohibited in attempts to reduce further soil displacement. Furthermore, following abandonment of the well pad all disturbed surfaces will be recontoured to the original grade promptly seeded with the appropriate seed mixture as outlined in the vegetation section of this document and then covered with a sufficient amount of woody debris (if available).

13. To mitigate surface erosion at the well pad, interim reclamation will be required as outlined in the Air Quality mitigation section above.

14. Shallow aquifers shall be protected from hydrofracturing and the production of oil and gas by installation and cementing of surface and intermediate casing. Any groundwater produced from the Fort Union or Mesaverde Formations will be hauled off and disposed of due to poor water quality and therefore preventing adverse impacts to valuable surface and ground water resources. Environmentally unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of spill-guards (or equivalent spill prevention equipment) under and around pumping equipment is suggested to intercept such contaminants prior to contacting soils. Furthermore, all pits shall be lined and all wastes associated with construction and drilling will be properly treated and disposed of.

15. To mitigate contamination of soils and local ground water, environmentally unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of impermeable matting

under equipment (tanks, pumps, or other equipment used in handling hazardous liquids) is *suggested* to intercept such contaminants prior to contacting soils.

16. Complete reclamation will follow abandonment of well pad. Access road and well pad will be recontoured and 100% of disturbed surfaces will be revegetated with the suggested seed mixture as outlined in the vegetation section of this document.

17. Promptly revegetate all disturbed areas with Native Seed mix #3. Revegetation will commence immediately after construction and will not be delayed until the following fall. Debris will not be scattered on the pipeline until after seeding operations are completed.

18. Seed mixture rates are Pure Live Seed (PLS) pounds per acre. Drill seeding is the preferred method of application. To encourage forb establishment, special provisions (e.g., separate broadcast and light dragging) will be made to prevent forb seed from becoming too deeply buried during the seeding process (i.e., objective seeding depth of 1/8" to no greater than 1/2").

Native Seed Mix # 3		
Plant Species	PLS/Lb	Ecological Site
Western wheatgrass (Rosana)	2	Gravelly 10"-14", Pinyon/Juniper Woodland, Stony Foothills, 147 (Mountain Mahogany)
Bluebunch wheatgrass ( Whitmar)	2	
Needle and thread	1	
Indian ricegrass (Rimrock)	2	
Fourwing saltbush (Wytana)	1	
Utah sweetvetch	1	

19. If construction/development occurs between April 15 and November 15, the operator will be required to water or surface access roads to reduce airborne dust and damage to roadside vegetation communities.

20. Within a minimum 1/4 mile (south) of the pad edge, the proposed well access will be shifted to the western edge of the ridge to provide maximum reasonable separation between surface disturbance and the red-tailed hawk nest site. Also within 1/4 mile of pad, no turnouts will be constructed on the east side of access road and the pipeline right-of-way width will be minimized to the extent practicable. The operator will be responsible for effectively conditioning the existing 2-track to deter any further vehicle traffic and allow for natural recovery of the track.

21. Public access must be maintained beyond well pad to the north along existing two-track route.

22. The operator has two options for treatment of slash from this project. A hydro-ax or other mulching type machine could be used to remove the trees. The machines are capable of shredding trees up to 12" in diameter and 15' tall as well as mowing brush like a conventional brush beater. It generally leaves small branches and pieces of wood from pencil size up to bowling ball size and the mulch is evenly scattered across the surface. This would effectively breakdown the woody fuel and scatters the debris thereby eliminating any hazardous fuel load adjacent to the new road and well pad. The other option would be to cut trees and have them removed for firewood, posts, or other products. The branches and tops should be lopped and

scattered to a depth of 24 inches or less. If the products are left for collection by the general public, they should be stacked in small manageable piles along the roadside or pad to facilitate removal. For material brought back onto the pipeline r-o-w the material should be evenly scattered, so as to not create jackpots, and the material should not exceed 5 tons /acre.

23. The applicant will be billed for the forest materials removed as described by the proposed action. Forestry concurs with mitigation proposed by fire management. This would also decrease the opportunity for an outbreak of pine beetle.

24. A paleontological inventory of the exposed outcrops along the access road and on the well pad location shall be completed and an inventory report detailing the results of the inventory and any recommended mitigation submitted to the BLM prior to the initiation of any construction.

25. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear to be of noteworthy scientific interest
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible)

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

26. Prior the initiation of any excavation into the underlying rock a paleontological monitor shall be present for all excavations into the rock formation for grading the road, burying the well tie pipelines, leveling the well pad and/or excavation of the reserve/blooiie pit.

27. All fences crossed by an access road to the well location, pipeline will have a cattleguard installed and maintained to BLM specifications for the lifetime of the project. All cattleguard/fence work will take place prior to well location and pipeline construction.

28. Any and all fences intersected by the pipeline will be braced to BLM specifications prior to cutting. A temporary wire gate will be constructed. This work will take place prior to pipeline ROW construction. A copy of the applicable BLM fence specifications will be included as part of the conditions of approval.

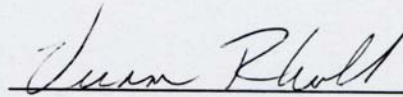
29. Reserve pit fencing will comply with BLM specifications as described in the *BLM Gold Book (Fourth Edition, 2005)*. Reserve pit fence specifications will be included as part of the conditions of approval. Revegetate as described in the Vegetation section.

30. Paint all production facilities Juniper Green (Munsell Soil Color Chart of Standard Environmental Colors) within 6 months of installation.

**NAME OF PREPARER:** Keith Whitaker

**NAME OF ENVIRONMENTAL COORDINATOR:** Caroline P. Hollowed

**SIGNATURE OF AUTHORIZED OFFICIAL:**



Field Manager

**DATE SIGNED:** 3/13/06

**ATTACHMENTS:** Location map of the proposed action



## Location Map of the Proposed Action CO-110-2006-045-EA

